SEQUENCE LISTING

<110> Kenten, John
Roberts, Steven

<120> CONTROLLING PROTEIN LEVELS IN EUCARYOTIC ORGANISMS

<130> 2757-5

<140> Unassigned
<141> 2001-06-14

<150> 09/406,781
<151> 1999-09-28

<150> 60/119,851
<151> 1999-02-12

<160> 67

<170> PatentIn Ver. 2.1

<210> 1
<211> 20
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: PEST example sequence

<400> 1
Met Glu Phe Met His Ile Ser Pro Pro Glu Pro Glu Ser Glu Glu Glu
1 5 10 15

Glu Glu His Ser
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<210> 2
<211> 10
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: PEST example sequence

<400> 2
Met Glu Phe Met His Glu Ser His Ser Ser
1 5 10

<210> 3
<211> 16
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: PEST example sequence

<400> 3
Met Glu Phe Met His Ile Ser Pro Pro Glu Pro Glu Ser His Ser Ser
1 5 10 15

<210> 4
<211> 15
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: PEST example sequence

<400> 4
Met Glu Phe Met His Glu Ser Glu Glu Glu Glu Glu His Ser Ser
1 5 10 15

<210> 5
<211> 10
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: PEST example sequence

<400> 5
Met Glu Ala Ser Glu Glu Glu Glu Glu Phe
1 5 10

<210> 6
<211> 28
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: PEST example sequence

<400> 6
His Gly Phe Pro Pro Glu Val Glu Glu Gln Asp Asp Gly Thr Leu Pro
1 5 10 15

Met Ser Cys Ala Gln Glu Ser Gly Met Asp Arg His
20 25

<210> 7
<211> 28

<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: PEST example sequence

<400> 7
His Gly Phe Pro Pro Ala Val Ala Ala Gln Asp Asp Gly Thr Leu Pro
1 5 10 15

Met Ser Cys Ala Gln Glu Ser Gly Met Asp Arg His
20 25

<210> 8
<211> 28
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: PEST example sequence

<400> 8
His Gly Phe Pro Pro Glu Val Glu Glu Gln Asp Asp Gly Ala Leu Pro
1 5 10 15

Met Ser Cys Ala Gln Glu Ser Gly Met Asp Arg His
20 25

<210> 9
<211> 28
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: PEST example sequence

<400> 9
His Gly Phe Pro Pro Glu Val Glu Glu Gln Asp Asp Gly Thr Leu Pro
1 5 10 15

Met Ser Cys Ala Gln Glu Ser Gly Met Asp His His
20 25

<210> 10
<211> 28
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: PEST example sequence

<400> 10
His Gly Phe Pro Pro Glu Val Glu Glu Gln Asp Val Gly Thr Leu Pro
1 5 10 15

Met Ser Cys Ala Gln Glu Ser Gly Met Asp Arg His
20 25

<210> 11
<211> 28
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: PEST example sequence

<400> 11
His Gly Phe Pro Pro Glu Val Glu Glu Gln Asp Val Gly Thr Leu Pro
1 5 10 15

Ile Ser Cys Ala Gln Glu Ser Gly Met Asp Arg His
20 25

<210> 12
<211> 28
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: PEST example sequence

<400> 12
His Gly Phe Pro Pro Glu Val Glu Glu Gln Asp Ala Ser Thr Leu Pro
1 5 10 15

Val Ser Cys Ala Trp Glu Ser Gly Met Lys Arg His
20 25

<210> 13
<211> 26
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: PEST example sequence

<400> 13
Phe Pro Pro Gly Val Glu Glu Pro Asp Val Gly Pro Leu Pro Val Ser
1 5 10 15

Cys Ala Trp Glu Ser Gly Met Lys Arg His

20 25

<210> 14
<211> 27
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: PEST example sequence

<400> 14
Phe Leu Ala Glu Val Glu Glu Gln Asp Val Ala Ser Leu Pro Leu Ser
1 5 10 15

Cys Ala Cys Glu Ser Gly Ile Glu Tyr Pro Ala
20 25

<210> 15
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: consensus sequence

<220>
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<222> (2)..(3)
<223> any amino acid

<220>
<221> MOD_RES
<222> (10)..(12)
<223> any amino acid

<220>
<221> MOD_RES
<222> (15)
<223> any amino acid

<220>
<221> MOD_RES
<222> (19)
<223> any amino acid

<220>
<221> MOD_RES
<222> (23)..(24)
<223> any amino acid

<220>
<221> MOD_RES
<222> (25)

<223> optional amino acid

<400> 15
Phe Xaa Xaa Glu Val Glu Glu Gln Asp Xaa Xaa Xaa Leu Pro Xaa Ser
1 5 10 15

Cys Ala Xaa Glu Ser Gly Xaa Xaa Xaa
20 25

<210> 16
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: consensus sequence

<220>
<221> MOD_RES
<222> (2)..(3)
<223> any amino acid

<220>
<221> MOD_RES
<222> (10)..(12)
<223> any amino acid

<220>
<221> MOD_RES
<222> (15)
<223> any amino acid

<220>
<221> MOD_RES
<222> (19)
<223> any amino acid

<220>
<221> MOD_RES
<222> (23)..(24)
<223> any amino acid

<220>
<221> MOD_RES
<222> (25)
<223> optional amino acid

<220>
<221> MOD_RES
<222> (26)
<223> any amino acid

<400> 16
Phe Xaa Xaa Ala Val Ala Ala Gln Asp Xaa Xaa Xaa Leu Pro Xaa Ser
1 5 10 15

Cys Ala Xaa Glu Ser Gly Xaa Xaa Xaa Xaa
20 25

<210> 17
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: consensus sequence

<220>
<221> MOD_RES
<222> (3)..(4)
<223> any amino acid

<220>
<221> MOD_RES
<222> (8)
<223> any amino acid

<220>
<221> MOD_RES
<222> (9)..(10)
<223> optional amino acid

<220>
<221> MOD_RES
<222> (12)..(14)
<223> any amino acid

<220>
<221> MOD_RES
<222> (16)..(17)
<223> any amino acid

<220>
<221> MOD_RES
<222> (26)..(28)
<223> any amino acid

<400> 17
His Gly Xaa Xaa Pro Glu Val Xaa Xaa Xaa Asp Xaa Xaa Xaa Leu Xaa
1 5 10 15

Xaa Ser Cys Ala Gln Glu Ser Gly Met Xaa Xaa Xaa
20 25

<210> 18
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 18
Arg His Ala Leu Asp Asp Val Ser Asn
1 5

<210> 19
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 19
Arg Leu Ala Leu Asn Asn Val Thr Asn
1 5

<210> 20
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 20
Arg Ala Ala Leu Gly Asp Val Ser Asn
1 5

<210> 21
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 21
Arg Gln Val Leu Gly Asp Ile Gly Asn
1 5

<210> 22
<211> 9
<212> PRT
<213> Unknown Organism

<220>

<223> Description of Unknown Organism: D box example sequence

<400> 22
Arg Ala Ala Leu Gly Asp Leu Gln Asn
1 5

<210> 23
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 23
Arg Ala Ala Leu Gly Asn Ile Ser Asn
1 5

<210> 24
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 24
Arg Asn Thr Leu Gly Asp Ile Gly Asn
1 5

<210> 25
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 25
Arg Thr Ala Leu Gly Asp Ile Gly Asn
1 5

<210> 26
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example

sequence

<400> 26
Arg Ala Ala Leu Gly Glu Ile Gly Asn
1 5

<210> 27
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 27
Arg Ala Val Leu Glu Glu Ile Gly Asn
1 5

<210> 28
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 28
Arg Ser Ala Phe Gly Asp Ile Thr Asn
1 5

<210> 29
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 29
Arg Ser Ile Leu Gly Val Ile Gln Ser
1 5

<210> 30
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 30
Arg Ala Ala Leu Gly Val Ile Thr Asn
1 5

<210> 31
<211> 10
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 31
Arg Thr Val Leu Gly Val Ile Gly Asp Asn
1 5 10

<210> 32
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 32
Arg Thr Val Gly Val Leu Gln Glu Asn
1 5

<210> 33
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 33
Arg Ala Ala Leu Gly Thr Val Gly Glu
1 5

<210> 34
<211> 10
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 34
Arg Thr Val Leu Gly Val Leu Thr Glu Asn
1 5 10

<210> 35
<211> 11
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 35
Arg Ala Ala Leu Ala Val Leu Lys Ser Gly Asn
1 5 10

<210> 36
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 36
Arg Leu Pro Leu Ala Ala Lys Asp Asn
1 5

<210> 37
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 37
Arg Gln Leu Phe Pro Ile Pro Leu Asn
1 5

<210> 38
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box example sequence

<400> 38

Arg Arg Thr Leu Lys Val Ile Gln Pro
1 5

<210> 39
<211> 9
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: D box general structure

<220>
<221> MOD_RES
<222> (2)
<223> Ala or Thr

<220>
<221> MOD_RES
<222> (3)
<223> amino acid present more than %50 of the time

<220>
<221> MOD_RES
<222> (6)
<223> any amino acid

<220>
<221> MOD_RES
<222> (7)
<223> Ile or Val

<220>
<221> MOD_RES
<222> (8)
<223> Gly or Thr

<220>
<221> MOD_RES
<222> (9)
<223> amino acid present more than %50 of the time

<400> 39
Arg Xaa Ala Leu Gly Xaa Xaa Xaa Asn
1 5

<210> 40
<211> 21
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: ubiquitination recognition element

<400> 40
Lys Glu Phe Ala Val Pro Asn Glu Thr Ser Asp Ser Gly Phe Ile Ser
1 5 10 15

Gly Pro Gln Ser Ser
20

<210> 41
<211> 22
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: ubiquitination recognition element

<400> 41
Lys Gly Pro Asp Glu Ala Glu Glu Ser Gln Tyr Asp Ser Gly Leu Glu
1 5 10 15

Ser Leu Arg Ser Leu Arg
20

<210> 42
<211> 20
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: ubiquitination recognition element

<400> 42
Lys Ala Ala Asp Ala Asp Glu Trp Cys Asp Ser Gly Leu Gly Ser Leu
1 5 10 15

Gly Pro Asp Ala
20

<210> 43
<211> 21
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: ubiquitination recognition element

<400> 43
Lys Lys Glu Arg Leu Leu Asp Asp Arg His Asp Ser Gly Leu Asp Ser
1 5 10 15

Met Lys Asp Glu Glu
20

<210> 44
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: consensus sequence

<220>
<221> MOD_RES
<222> (2)...(11)
<223> any amino acid

<220>
<223> positions 2-11 may encompass X(8-10)

<400> 44
Lys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Asp Ser Gly
1 5 10

<210> 45
<211> 12
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: ubiqitination recognition element

<400> 45
Ser Tyr Leu Asp Ser Gly Ile His Ser Gly Ala Thr
1 5 10

<210> 46
<211> 12
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: ubiqitination recognition element

<400> 46
Arg Ala Glu Asp Ser Gly Asn Glu Ser Glu Gly Glu
1 5 10

<210> 47
<211> 6
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: example peptide

<220>
<221> MOD_RES
<222> (3)...(4)
<223> any amino acid

<400> 47
Cys Cys Xaa Xaa Cys Cys
1 5

<210> 48
<211> 17
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: example peptide

<400> 48
Trp Glu Ala Ala Ala Arg Glu Ala Cys Cys Arg Glu Cys Cys Ala Arg
1 5 10 15

Ala

<210> 49
<211> 17
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: example peptide

<400> 49
Ala Glu Ala Ala Ala Arg Glu Ala Cys Cys Arg Glu Cys Cys Ala Arg
1 5 10 15

Ala

<210> 50
<211> 22
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: ubiquitination
recognition element

<400> 50
Lys Lys Glu Arg Leu Leu Asp Asp Arg His Asp Ser Gly Leu Asp Ser
1 5 10 15

Met Lys Asp Glu Glu Cys
20

<210> 51
<211> 12
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: ubiquitination recognition element

<400> 51
Arg Ala Ala Leu Ala Val Leu Lys Ser Gly Asn Cys
1 5 10

<210> 52
<211> 29
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: ubiquitination recognition element

<400> 52
His Gly Phe Pro Pro Glu Val Glu Glu Gln Asp Val Gly Thr Leu Pro
1 5 10 15

Ile Ser Cys Ala Gln Glu Ser Gly Met Asp Arg His Cys
20 25

<210> 53
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: consensus sequence

<220>
<221> MOD_RES
<222> (2)...(3)
<223> any amino acid

<220>
<221> MOD_RES
<222> (6)
<223> any amino acid

<220>
<221> MOD_RES

<222> (8)
<223> any amino acid

<400> 53
Arg Xaa Xaa Leu Gly Xaa Ile Xaa Asn
1 5

<210> 54
<211> 10
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: ubiquitination recognition element

<400> 54
Arg His Ala Leu Asp Asp Val Ser Asn Lys
1 5 10

<210> 55
<211> 29
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: ubiquitination recognition element

<400> 55
His Gly Phe Pro Pro Glu Val Glu Glu Gln Asp Val Gly Thr Leu Pro
1 5 10 15

Ile Ser Cys Ala Gln Glu Ser Gly Met Asp Arg His Lys
20 25

<210> 56
<211> 4
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: binding peptide

<400> 56
Tyr Glu Glu Ile
1

<210> 57
<211> 18
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: binding peptide

<400> 57
Asp Arg Glu Gly Cys Arg Arg Gly Trp Val Gly Gln Cys Lys Ala Trp
1 5 10 15

Phe Asn

<210> 58
<211> 22
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: binding peptide

<400> 58
Glu Thr Pro Thr Phe Thr Trp Glu Glu Ser Asn Ala Tyr Tyr Trp Gln
1 5 10 15

Pro Tyr Ala Leu Pro Leu
20

<210> 59
<211> 12
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: binding peptide

<400> 59
Thr Phe Val Tyr Trp Gln Pro Tyr Ala Leu Pro Leu
1 5 10

<210> 60
<211> 15
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: binding peptide

<400> 60
Val Ser Leu Ala Arg Arg Pro Leu Pro Pro Leu Pro Gly Gly Lys
1 5 10 15

<210> 61
<211> 17
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: binding peptide

<400> 61
Lys Gly Gly Gly Ala Ala Pro Pro Leu Pro Pro Arg Asn Arg Pro Arg
1 5 10 15

Leu

<210> 62
<211> 15
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: binding peptide

<400> 62
Ala Glu Cys His Pro Gln Gly Pro Pro Cys Ile Glu Gly Arg Lys
1 5 10 15

<210> 63
<211> 13
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: binding peptide

<400> 63
Gly Ala Cys Arg Arg Glu Thr Ala Trp Ala Cys Gly Ala
1 5 10

<210> 64
<211> 12
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: binding peptide

<400> 64
Asp Ile Thr Trp Asp Gln Leu Trp Asp Leu Met Lys
1 5 10

<210> 65
<211> 13
<212> PRT
<213> Unknown Organism

<220>

<223> Description of Unknown Organism: binding peptide

<400> 65
Arg Asn Met Ser Trp Leu Glu Leu Trp Glu His Met Lys
1 5 10

<210> 66
<211> 4
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: ubiquitination recognition element

<220>
<221> MOD_RES
<222> (3)
<223> beta-Ala

<220>
<223> caproic acid linker between positions 3-4

<400> 66
Arg Ala Ala Cys
1

<210> 67
<211> 4
<212> PRT
<213> Unknown Organism

<220>
<223> Description of Unknown Organism: ubiquitination recognition element

<220>
<221> MOD_RES
<222> (3)
<223> beta-Ala

<220>
<223> caproic acid linker between positions 3-4

<400> 67
Pro Ala Ala Cys
1